

Listing of the Claims:

This listing of the claims will replace all prior versions, and listings, of the claims in the application:

1. (Currently Amended) A power system common power source subsystem comprising:
  - a power source unregulated bus;
  - a plurality of power source regulated buses, each respective power source regulated bus originating at a common power source and terminating at a respective one of k load subsystems, each respective power source regulated bus directly coupling only the common power source and the respective one of the k load subsystems without coupling to any other of the k load subsystems;
  - for each respective one of the k load subsystems, a plurality of direct independent electrical interconnections between the respective one of the k load subsystems and each other one of the k load subsystems, each direct independent electrical interconnection comprising one or more conductors, wherein each direct independent electrical interconnection originates at the respective one of the k load subsystems and terminates at one other of the k load subsystems without coupling to any other of the k load subsystems, such that there is no more than a single direct independent electrical interconnection between any two of the k load subsystems and such that the total number of the plurality of direct independent electrical interconnections between all of the k load subsystems comprises no more than  $k * [(k-1)/2]$  direct, independent electrical interconnections;
  - at least one power source, each of said at least one power source having an output;
  - a first group of at least one switch, each of said first group of at least one switch coupling a respective one of said at least one power source output to said power source unregulated bus;
  - at least one regulator, each of said at least one regulator having an input and an output;
  - a second group of at least one switch, each of said second group of at least one switch coupling a respective input of said at least one regulator to said power source unregulated bus;
  - and

a third group of at least one switch, each of said third group of at least one switch coupling a respective one of said at least one regulator output to said power source regulated bus;

a controller having a plurality of outputs ~~and operable to provide a time-shared mode of operation to provide power sequentially to one or more of the plurality of subsystems~~, at least one of said plurality of outputs coupled to at least one of said first group of at least one switch, at least one of said plurality of outputs coupled to at least one of said second group of at least one switch, and at least one of said plurality of outputs coupled to at least one of said third group of at least one switch; and

at least one sensor, each of said at least one sensor having an output coupled to said controller.

2. (Original) The power system common power source subsystem of claim 1 further comprising:

at least one stabilizer, each of said at least one stabilizer having an input coupled to a respective power source, and having an output; and

a fourth group of at least one switch, each of said fourth group of at least one switch coupling a respective stabilizer output to said power source unregulated bus.

3. (Original) The power system common power source subsystem of claim 2 further comprising at least one energy storage element, each of said at least one energy storage element having an output coupled to a respective one of said at least one regulator.

4. (Original) The power system common power source subsystem of claim 1 wherein said power source is selected from the group consisting of a battery, a generator, a fuel cell and a solar cell.

5. (Original) The power system common power source subsystem of claim 1 wherein said stabilizer comprises a device wherein a first voltage level is converted to a second voltage level.

6. (Previously Presented) The power system common power source subsystem of claim 3 wherein said energy storage element is selected from the group consisting of a battery, a flywheel, a capacitor, and an inductor.
7. (Currently Amended) A power system subsystem component comprising:
- a subsystem unregulated bus;
  - a plurality of subsystem regulated buses, each respective subsystem regulated bus originating at a common power source and terminating at a respective one of k load subsystems, each respective power source regulated bus directly coupling only the common power source and the respective load subsystem without coupling to any of the other load subsystems;
  - for each respective one of the k load subsystems, a plurality of direct independent electrical interconnections between the respective one of the k load subsystems and each other one of the k load subsystems, each direct independent electrical interconnection comprising one or more conductors, wherein each direct independent electrical interconnection originates at the respective one of the k load subsystems and terminates at one other of the k load subsystems without coupling to any other of the k load subsystems, such that there is no more than a single direct independent electrical interconnection between any two of the k load subsystems and such that the total number of the plurality of direct, independent electrical interconnections between all of the k load subsystems comprises no more than  $k * [(k-1)/2]$  direct, independent electrical interconnections
  - at least one power source having an output;
  - a first group of at least one switch, each of said first group of at least one switch coupling said power source output to said subsystem regulated bus;
  - a controller having a plurality of outputs ~~and operable to provide a time-shared mode of operation to provide power sequentially to one or more of the plurality of subsystems~~, at least one of said plurality of outputs coupled to at least one of said first group of at least one switch;
  - and

at least one sensor, each of said at least one sensor having an output coupled to said controller.

8. (Original) The power system subsystem component of claim 7 further comprising:  
at least one regulator, each of said at least one regulator having an input coupled to said subsystem unregulated bus, and an output; and

a second group of at least one switch, each of said second group of at least one switch coupling a respective output of said at least one regulator to said subsystem regulated bus and wherein said second group of at least one switch is controlled by said controller.

9. (Original) The power system subsystem component of claim 7 further comprising:  
at least one stabilizer, each of said at least one stabilizer having an input coupled to said subsystem unregulated bus, and having an output; and

a third group of at least one switch, each of said second group of at least one switch coupling a respective stabilizer output to said subsystem regulated bus and wherein said third group of at least one switch is controlled by said controller.

10. (Original) The power system subsystem component of claim 7 further comprising:  
at least one energy storage element, each of said at least one energy storage element having an output; and

a fourth group of at least one switch, each of said fourth group of at least one switch coupling a respective output of said at least one energy storage element to said subsystem regulated bus and wherein said fourth group of at least one switch is controlled by said controller.

11. (Original) The power system subsystem component of claim 7 further comprising:  
at least one load; and

a fifth group of at least one switch, each of said fifth group of at least one switch coupling a respective load to said subsystem regulated bus and wherein said fifth group of at least one switch is controlled by said controller.

12. (Original) The power system subsystem component of claim 7 wherein said power source is selected from the group consisting of a battery, a generator, a fuel cell and a solar cell.

13. (Original) The power system subsystem component of claim 7 wherein said stabilizer comprises a device wherein a first voltage level is converted to a second voltage level.

14. (Previously Presented) The power system subsystem component of claim 10 wherein said energy storage element is selected from the group consisting of a battery, a flywheel, a capacitor, and an inductor.

15. (Previously Presented) A power system comprising:  
a common power source component;  
at least two or more power system subsystem components the two or more power system subsystem components comprising k power system subsystem components; and  
a plurality of direct, independent electrical interconnects to connect said common power source component individually to each one of the k power system subsystem components, each respective direct, independent electrical interconnect originating at the common power source component and terminating at a respective one of the k power subsystem components without electrically coupling to any of the other k power system subsystem components or to any other electrical element, wherein the direct independent electrical interconnect comprises one or more conductors.

16. (Previously Presented) The power system of claim 15 wherein at least one of the direct independent electrical interconnects comprises a power interconnect and wherein at least one of the direct independent interconnects comprises a control signal interconnect.

17. (Original) The power system of claim 16 wherein said control signal interconnect comprises an interconnect selected from the group consisting of electrical, optical infrared and wireless.

18. (Currently Amended) The system of claim 17 wherein said common power source component comprises:

- a power source unregulated bus;

- a plurality of power source regulated buses, each respective power source regulated bus originating at a common power source and terminating at a respective one of k load subsystems, each respective power source regulated bus directly coupling only the common power source and the respective load subsystem without coupling to any of the other load subsystems;

- for each respective one of the k load subsystems, a plurality of direct independent electrical interconnections between the respective one of the k load subsystems and each other one of the k load subsystems, each direct independent electrical interconnection comprising one or more conductors, wherein each direct independent electrical interconnection originates at the respective one of the k load subsystems and terminates at one other of the k load subsystems without coupling to any other of the k load subsystems, such that there is no more than a single direct independent electrical interconnection between any two of the k load subsystems and, such that total number of the plurality of direct, independent electrical interconnections between all of the k load subsystems comprises no more than  $k * [(k-1)/2]$  direct, independent electrical interconnections;

- at least one power source, each of said at least one power source having an output;

- a first group of at least one switch, each of said first group of at least one switch coupling a respective one of said at least one power source output to said power source unregulated bus;

- at least one regulator, each of said at least one regulator having an input and an output;

- a second group of at least one switch, each of said second group of at least one switch coupling a respective input of said at least one regulator to said power source unregulated bus;

and

a third group of at least one switch, each of said third group of at least one switch coupling a respective one of said at least one regulator output to said power source regulated bus;

a controller having a plurality of outputs ~~and capable to provide a time-shared mode of operation to provide power sequentially to one or more of the plurality of subsystem components~~, at least one of said plurality of outputs coupled to at least one of said first group of at least one switch, at least one of said plurality of outputs coupled to at least one of said second group of at least one switch, and at least one of said plurality of outputs coupled to at least one of said third group of at least one switch; and

at least one sensor, each of said at least one sensor having an output coupled to said controller.

19. (Currently Amended) The system of claim 17 wherein said power system subsystem component comprises:

a subsystem unregulated bus;

a plurality of subsystem regulated buses, each respective subsystem regulated bus originating at a common power source and terminating at a respective one of k load subsystems, each respective power source regulated bus directly coupling only the common power source and the respective one of the k load subsystems without coupling to any other of the k load subsystems;

for each respective one of the k load subsystems, a plurality of direct independent electrical interconnections between the respective one of the k load subsystems and each other one of the k load subsystems, each direct independent interconnection comprising one or more conductors, wherein each direct independent electrical interconnection originates at the respective one of the k load subsystems and terminates at one other of the k load subsystems without coupling to any other of the k load subsystems, such that there is no more than a single direct independent electrical interconnection between any two of the k load subsystems, and such that the total number of the plurality of direct, independent electrical interconnections between all of the k load subsystems comprises no more than  $k * [(k-1)/2]$  interconnections;

a power source having an output;

a first group of at least one switch, each of said first group of at least one switch coupling said power source output to said subsystem regulated bus;

a controller having a plurality of outputs ~~and operable to provide a time-shared mode of operation to provide power sequentially to one or more of the plurality of subsystem components~~, at least one of said plurality of outputs coupled to at least one of said first group of at least one switch; and

at least one sensor, each of said at least one sensor having an output coupled to said controller.

20. (Original) The system of claim 18 wherein said power system common power source subsystem further comprises:

at least one stabilizer, each of said at least one stabilizer having an input coupled to a respective power source, and having an output; and

a fourth group of at least one switch, each of said fourth group of at least one switch coupling a respective stabilizer output to said power source unregulated bus.

21. (Original) The system of claim 18 wherein said power system common power source subsystem further comprises at least one energy storage element, each of said at least one energy storage element having an output coupled to a respective one of said at least one regulator.

22. (Original) The system of claim 18 wherein said power source is selected from the group consisting of a battery, a generator, a fuel cell and a solar cell.

23. (Original) The system of claim 18 wherein said stabilizer comprises a device wherein a first voltage level is converted to a second voltage level.

24. (Previously Presented) The system of claim 21 wherein said energy storage element is selected from the group consisting of a battery, a flywheel, a capacitor, and an inductor.



25. (Original) The system of claim 19 wherein said power system subsystem component further comprises:

at least one regulator, each of said at least one regulator having an input coupled to said subsystem unregulated bus, and an output; and

a second group of at least one switch, each of said second group of at least one switch coupling a respective output of said at least one regulator to said subsystem regulated bus and wherein said second group of at least one switch is controlled by said controller.

26. (Currently Amended) The power system subsystem component of claim 19 further comprising:

at least one stabilizer, each of said at least one stabilizer having an input coupled to said subsystem unregulated bus, and having an output; and

a third group of at least one switch, each of said third ~~second~~ group of at least one switch coupling a respective stabilizer output to said subsystem regulated bus and wherein said third group of at least one switch is controlled by said controller.

27. (Original) The power system subsystem component of claim 19 further comprising:

at least one energy storage element, each of said at least one energy storage element having an output; and

a fourth group of at least one switch, each of said fourth group of at least one switch coupling a respective output of said at least one energy storage element to said subsystem regulated bus and wherein said fourth group of at least one switch is controlled by said controller.

28. (Original) The power system subsystem component of claim 19 further comprising:

at least one load; and

a fifth group of at least one switch, each of said fifth group of at least one switch coupling a respective load to said subsystem regulated bus and wherein said fifth group of at least one switch is controlled by said controller.

29. (Original) The power system subsystem component of claim 19 wherein said power source is selected from the group consisting of a battery, a generator, a fuel cell and a solar cell.

30. (Original) The power system subsystem component of claim 19 wherein said stabilizer comprises a device wherein a first voltage level is converted to a second voltage level.

31. (Previously Presented) The power system subsystem component of claim 27 wherein said energy storage element is selected from the group consisting of a battery, a flywheel, a capacitor, and an inductor.

32. (Original) The power system of claim 15 wherein said power system supplies power in at least one mode, said at least one mode selected from the group consisting of a single power mode wherein a single power source supplies power for said power system, a simultaneous power mode wherein a first power source provides power to a first power source subsystem component and wherein a second power source provides power to a second power source subsystem component, and a sequential mode wherein a first power source provides power for said power system for a first time interval and a second power source provides power for said power system for a second time interval.

33. (Previously Presented) A power system comprising:

at least one common power source;

k power subsystem components, each respective one of the k power subsystem components having a corresponding direct, independent first electrical interconnection that originates at the common power source component and terminates at the respective one of the k power subsystem components without coupling to any other of the k load subsystems;

for each respective one of the k power subsystem components, a plurality of direct independent second electrical interconnections between the respective one of the k power subsystem components and each other one of the k power subsystem components, each direct

independent second electrical interconnection comprising one or more conductors, wherein each of the plurality of direct independent second electrical interconnections originates at the respective one of the k power subsystem components and terminates at one other of the k power subsystem components without coupling to any other of the k power subsystem components, such that there is no more than a single direct independent electrical interconnection between any two of the k power subsystem components, and, such that the total number of the plurality of direct, independent second electrical interconnections comprises no more than  $k * [(k-1)/2]$  direct, independent second electrical interconnections;

wherein each direct independent first electrical interconnection further comprises a connection to a plurality of subsystem regulated buses and a connection to a subsystem unregulated bus; and

wherein each direct independent second electrical interconnection further comprises a connection to at least one of the plurality of subsystem regulated buses and a connection to the subsystem unregulated bus.

34. Canceled

35. Canceled

36. (New) The power system common power source subsystem of claim 1, wherein the controller provides a time-shared mode of operation to provide power sequentially to one or more of the plurality of subsystems.

37. (New) The power system subsystem component of claim 7, wherein the controller provides a time-shared mode of operation to provide power sequentially to one or more of the plurality of subsystems.

38. (New) The system of claim 18, wherein the controller of the common power source component provides a time-shared mode of operation to provide power sequentially to one or more of the plurality of subsystem components.

39. (New) The system of claim 19, wherein the controller of the power system subsystem component provides a time-shared mode of operation to provide power sequentially to one or more of the plurality of subsystem components